

MAKING MIXTURES
Child-Directed Explorations of
Transformations

Flour and Oil
Shaving Cream and Cornstarch
Oobleck
Invent Your Own Playdough
Clean Mud



#1: Flour and Oil



Materials

For each person:

- 1 medium sized bowl
- 1-2 cups of flour
- Approximately $\frac{1}{4}$ cup vegetable or baby oil (use vegetable if concerned children may eat it)
- 1 spoon

Other:

- Small containers for oil (or squeeze bottles)
- Extra spoons for scooping flour
- Newspaper or sheet to cover table
- Sponge and towels for clean up

Optional:

- Powdered tempera paint
- Glitter
- Small molds, such as condiment cups

What to Do:

1. Cover table with newspaper.
2. Before you begin, use your senses to observe and describe the ingredients. (With children, have them share prior experiences with the ingredients.)
3. Start with a scoop of flour in your bowl.
4. Add oil a little at a time. Mix well with spoon or hands.
5. Continue to add small amounts of flour and oil until ingredients are soft, silky and well mixed. You should be able to grab a chunk and mold it. If not, you may need to add more flour or oil.
6. Optional: Add powdered tempera paint and/or glitter.

Notes for doing this activity with children:

#2 Shaving Cream and Cornstarch



Each child can child make their own mixture in a small bowl, or a group can work together to mix up a large amount in a big bowl or dish tub. This mixture can eventually produce a moldable dough.

Materials:

- 1-2 boxes cornstarch
- 1-2 cans shaving cream (unscented is best)
- 1 large bowl/dish tub (or small bowls for making individual batches)
- Liquid watercolors or food coloring
- Stirring utensils
- Newspaper or sheet to cover table
- Sponge and towels for clean up

What to do:

1. Cover table with newspaper.
2. Before you begin, use your senses to observe and describe the ingredients. (With children, have them share prior experiences with the ingredients.)
3. Color the shaving cream either in small bowls or in one large bowl.
4. Slowly add cornstarch and mix gently with your hands until the mixture looks slightly doughy. If you keep the dough on the wet side, it will be fluffier. The more cornstarch you add, the drier the dough. Be careful not to over mix.

Dispose of the mixture in the trash, not down the drain.

Notes for doing this activity with children:



#3: Oobleck

Each child can make their own batch of oobleck in a small bowl, or a group can work together to mix up a large amount in a big bowl or dish tub.

Materials

- Small pitcher(s) or cups to hold water
- 1 -2 boxes of cornstarch (depending on size of group)
- Spoon for scooping cornstarch
- 1 large bowl/dish tub, or 1 small container for each child (such as small bowl or aluminum pie pan)
- Stirring spoons or popsicle sticks
- Optional: Liquid watercolors or food coloring
- Newspaper or sheet to cover table
- Sponge and towels for clean up

What to Do:

1. Cover table with newspaper.
2. Before you begin, use your senses to observe and describe the ingredients. (With children, have them share prior experiences with the ingredients.)
3. Pour cornstarch into bowl. Keep some in reserve in case you need to use more to adjust the consistency.
4. Add water a little at a time.
5. Keep stirring until it has a gooey consistency. You may want to use your hands.
6. Slowly add coloring, if desired.
7. If you want to make it thinner, add more water, and if you want it thicker, add a bit more cornstarch. The mixture should feel kind of like honey. You will have to experiment with more or less cornstarch or water.

*Oobleck is a suspension, not a solution. The cornstarch does not dissolve in the water like salt or sugar would. This is why it is **very important to not pour Oobleck down the drain**. Should the suspension separate in your drainpipes, the cornstarch will harden and block the drain. Dispose of Oobleck in the trash.*

Notes for doing this activity with children:

Recipe #4: Invent Your Own Playdough



Materials:

- Flour
- Salt
- Cornstarch
- Water
- Vegetable oil
- Optional: Tempera paint, liquid watercolors, or food coloring
- Bowls/containers to hold the ingredients
- Bowls for mixing (the size of the bowl will limit how much dough the children can make - large paper bowls work well)
- Measuring spoons of different sizes
- Playdough tools
- Newspaper or sheet to cover table
- Sponge and towels for clean up

What to Do:

1. Cover table with newspaper.
2. Before you begin, use your senses to observe and describe the ingredients. (With children, have them share prior experiences with the ingredients.)
3. Place the dry ingredients into bowls for sharing.
4. Place liquids into bowls or squeeze bottles. If using bowls, provide small measuring spoons for transferring liquids.
5. Give each child his or her own bowl to make their playdough.
6. Let children experiment mixing small amounts of the ingredients together to make their own playdough. As they mix the ingredients together, they can decide if they want to add more of a certain ingredient.
7. Provide tools such as rolling pins, cookie cutters, and plastic knives for playing with the dough.

You can store each child's playdough in a zipper-sealed plastic bag.

Notes for doing this activity with children:

#5: Clean Mud

Have a small group of children work together to mix up a large amount in a big bowl or dish tub.



Materials:

- 1-2 bars of mild white soap (such as Ivory), or use soap flakes
- Old cheese grater
- 1-2 rolls of toilet paper
- 1-2 cups very warm water (best if warm enough to melt soap. Can use microwave to heat)
- Pitcher
- Large dish tub or very large bowl
- Newspaper or sheet to cover table
- Sponge and towels for clean up

What to Do:

1. Cover table with newspaper.
2. Before you begin, use your senses to observe and describe the ingredients. (With children, have them share prior experiences with the ingredients.)
3. Grate the soap and place a few handfuls in the tub. (Pre-grate soap for children.)
4. Add warm water to the tub and mix well.
5. Tear some toilet paper into small pieces, and add it to the tub.
6. Mash it all together for several minutes to combine all of the paper and soapy water until you have a smooth, slippery, pulpy, mess like the consistency of mashed potatoes. For the first couple of minutes it won't feel like it's really turning into anything, but be patient. Keep working it.
7. Because every brand of toilet paper is different when it comes to roll-size and paper thickness, you may have to add more water or toilet paper. You can make it into a moldable dough or leave it more like cool whip.

To reuse this mixture, leave uncovered in the tub. If it gets stiff and dry, reconstitute it with hot water. Dispose of Clean Mud in the trash, NOT down the drain.

Notes for doing this activity with children: